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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,039	11/27/2001	Yong Sung Ham	42164-0009	7745

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MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER	
CHOW, DOON Y	
ART UNIT	**PAPER NUMBER**
2677	

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/994,039	HAM, YONG SUNG	
	Examiner	Art Unit	
	Dennis-Doon Chow	2677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,19 and 20* is/are rejected.

7)☒ Claim(s) *17-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumagawa et al. (6633272) in view of Ueno et al. (6320562) and Hirota (6552705)

Regarding to claims 1-4, 8-11 Kumagawa discloses an apparatus and method for driving a liquid crystal display, comprising: modulating a source data by adding a compensation voltage V1 to the source data and supplying the modulated source data to a display panel at an initial period of one frame interval tv (Abstract; V1 in Fig. 1); and applying the source data after the modulated source data to the display panel (delaying the source data while supplying the modulated source data to the display panel), see Fig. 1. The modulated source data inherently includes entire bits of the source data.

Kumagawa fails to disclose the source data is gray scale source data, and using a look up table to carry out the modulation process.

Ueno, in the same display art, disclose outputting gay scale source data to a display device (col. 22, lines 12-18) and using a look up table to modulate (compensate) the source data (col. 16, lines 13-18).

In light of Ueno, it would have been obvious to one ordinary skill in the art to use Ueno's gray scale source data in Kumagawa's apparatus so that gray scale images can be generated, and to use Ueno's look up table to carry out Kumagawa's modulation process because the look up table processes the modulation process much faster than real time calculation.

Kumagawa fails to disclose applying a black voltage data to the display panel for a portion of the frame period.

Hirota, in the same display field, discloses applying a black signal data to a liquid crystal panel (col.10, lines 46-61).

In light of Hirota, it would have been obvious to one of ordinary skill in the art apply Hirota's black signal after the source data in the frame interval of Kumagawa's display. This would have been obvious because the black signal data prevents color disturbance in the display panel (see col. 11, lines 25-28, Hirota).

Regarding to claims 5-7, 12-14, the modified Kumagawa inherently teaches alternatively applying the modulated source data, the source data, and the black signal data in the frame period, wherein each data has a delay period and a select period the frame interval.

Regarding to claim 15-16 and 19-20, the modified Kumagawa further discloses a data driver applying the modulated source data, the source data and the black data to the display panel, a scanning driver applying a scanning signal to the display panel, and a timing controller applying the source data to the modulator, and controlling the data driver, the scanning driver, and a switching time.

Allowable Subject Matter

3. Claims 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 2/24/06 have been fully considered but they are not persuasive.

Applicant's arguments with respect to the claim limitations of selecting a gray scale voltage level and a look up table have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that Kumagawa fails to teach claimed limitations because Kumagawa teaches adding a compensation pulse to an off state V2. Examiner disagrees with applicant's arguments because Kumagawa not only teaches apply to a compensation pulse to a signal voltage in an off state V2, but also teaches apply the compensation pulse to the signal voltage in an on state V4.

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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis-Doon Chow whose telephone number is 571-272-7767.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis-Doon Chow
Primary Examiner
Art Unit 2677

DENNIS-DOON CHOW
PRIMARY EXAMINER

D. Chow
March 4, 2006